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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/595,366

04/12/2006

Byung-moo An

1114.004

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7590

11/14/2007

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SUITE 200

CHARLOTTE, NC 28277

EXAMINER

RIPLEY, JAY R

ART UNIT

PAPER NUMBER

3679

MAIL DATE

DELIVERY MODE

11/14/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/595,366

Applicant(s)

AN, BYUNG-MOO

Examiner

Jay R. Ripley

Art Unit

3679

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 September 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☒ Other: See Continuation Sheet.

Continuation of Attachment(s) 6). Other: Attachments A, B, C, D, E, and F.

## **DETAILED ACTION**

Claims 1-7 are pending. No claims have been withdrawn. No claims have been cancelled.

### ***Drawings***

The drawings were received on 09/06/2007. These drawings are not acceptable.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, “a sealing unit provided inside each of the body part and the reinforcing unit” as recited in lines 3-4 of claim 4 must be shown or the features canceled from the claim. The term “inside” indicates the recited sealing units must be within the respective structures, i.e. encased structurally within the outer surfaces of the noted structures. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet”

pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to claim 1, it is recited in lines 4-7, “the body part defining a longitudinal axis extending between the pair of opposing circumferential edges, the body part further defining a transverse axis extending between the pair of opposing axial edges of the body part” (emphasis added). It is unclear as to which “longitudinal axis” that extends between the pair of opposing circumferential edges the Applicant is referring to. The Examiner notes that there are an infinity of such longitudinal axes. Is the Applicant attempting to define the central axis of the cylindrical structural shape of the body part? Further, when interpreting the term “transverse” in the context of cylindrical structures, the term “transverse” generally indicates something, such as an axis, that is perpendicular to the central axis of the cylindrical structure under discussion. However, the phrase “a transverse axis extending between the pair of opposing axial edges of the body part” can be interpreted to indicate a longitudinal axis extending between the pair of opposing axial edges of the body part or any axis that is transverse to the central axis of the cylindrical

body part that is located between the opposing axial edges of the body part. The Examiner interprets the phrase “a transverse axis extending between the pair of opposing axial edges of the body part” to indicate any axis that is transverse to the central axis of the cylindrical body part that is located between the opposing axial edges of the body part.

In regard to claim 1, it is recited in lines 17-18, “the reinforcing unit further defining a transverse axis extending between the pair of opposing axial edges of the body part” (emphasis added). First, it is unclear if the Applicant intends for the reinforcing unit to define a “transverse axis extending between the pair of opposing axial edges of the body part” or if “body part” should have been “reinforcing unit”. Further, when interpreting the term “transverse” in the context of cylindrical structures, the term “transverse” generally indicates something, such as an axis, that is perpendicular to the central axis of the cylindrical structure under discussion. The Examiner notes that the phrase “curved plate”, as recited in line 12 of claim 1, has been interpreted to indicate a curve that is arcuate in shape. However, the phrase “transverse axis extending between the pair of opposing axial edges of the body part” can be interpreted to indicate a longitudinal axis extending between the pair of opposing axial edges of the reinforcing unit or any axis that is transverse to the central axis of the arc of the curved plate that is located between the opposing axial edges of the reinforcing body part. The Examiner interprets the phrase “a transverse axis extending between the pair of opposing axial edges of the body part” to indicate any axis that is transverse to the central axis of the curved plate shaped reinforcing unit that is located between the opposing axial edges of the body part.

In regard to claim 1, it is recited in lines 19-22, “wherein at least one edge of the pair of opposing circumferential edges of the body part and at least one edge of the pair of opposing

circumferential edges of the reinforcing unit are substantially coplanar with respect to the transverse axes of the body part and reinforcing unit" (emphasis added). No where in claim 1 is it recited that the "transverse axes of the body part and reinforcing unit" are coplanar; therefore, it is unclear as to how can edges be coplanar with respect to two non-coplanar axes.

In regard to claim 7, it is recited in lines 4-6, "the positioning means facilitating the horizontal positioning of the reinforcing unit with respect to the body part". The term "horizontal" is a relative term that requires some base line to be "horizontal" from; therefore, it is unclear as to what structure is required to meet "positioning means" limitation.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

As best understood, claims 1, 3/1, 4/1, 4/3/1, 6/1, 6/3/1, and 7/1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bridges (U.S. 5,286,064) in view of Morris (U.S. 4,889,167).

In regard to claims 1, 3/1, 4/1, 4/3/1, 6/1, 6/3/1, and 7/1, as best understood Bridges discloses in Figures 1, 4, and 6, see Attachments A, B, and C, a pipe joint, comprising:

a body part (see Attachment A) provided by rolling a planar material to form a cylindrical structure, the body part having a pair of opposing circumferential edges and a pair of opposing axial edges (see Attachments B and C), the axial edges of the body part defining a longitudinal slot, the body part defining a longitudinal axis (see Attachment C) extending between the pair of opposing circumferential edges, the body part further defining a transverse axis (an arbitrarily chosen exemplary transverse axis noted in Figure 6, see Attachment C) extending between the pair of opposing axial edges of the body part;

a coupling part (see Attachment C) having a bent surface (the coupling part comprising the noted "bent part" in Figure 4, see Attachment B) at each of both ends of the body part, with a plurality of locking holes (see Attachment C) provided on the bent surface of the coupling part;

locking means (see Attachment B) tightened into the locking holes to couple the both ends of the body part to each other; and

a reinforcing unit (see Attachment B) comprising a separate curved plate, the reinforcing unit being reduced in thickness at both ends thereof (see Attachment B) to be in close contact with an inner surface of the body part, the reinforcing unit having a pair of opposing circumferential edges and a pair of opposing axial edges (see Attachment A to observe the respective edges), the reinforcing unit defining a longitudinal axis extending between the pair of opposing circumferential edges (an arbitrarily chosen exemplary longitudinal axis noted in Figure 1, see Attachment A), the reinforcing unit further defining a transverse axis extending between the pair of opposing axial edges of the body part (an arbitrarily chosen exemplary transverse axis noted in Figure 1, see Attachment A);



the body part is stepped (see Attachment D) around a predetermined portion thereof so that upper and lower parts of the body part differ in inner and outer diameters from each other (as observed in Figure 3, see Attachment D), each of the upper and lower parts having a consistent diameter (the noted shaded areas have consistent diameters) and defining substantially concentric, graduated parts such that the consistent diameter of one part is greater than the consistent diameter of the other part (as observed in Figure 3, see Attachment D);

a sealing unit provided inside each of the body part (radially inside - arcuate gasket part 60 - see Attachment B) and the reinforcing unit (radially inside - circumferential sealing pad part 40 - see Attachment B) to provide a sealing effect after joining pipes;

each of the coupling parts comprises a bending part to be attached to the body part (noted in Figure 4, see Attachment B);

the reinforcing unit further comprising positioning means (as noted in Figures 1 and 4, see Attachments A and B) extending longitudinally along at least a portion of an outer surface of the reinforcing unit and having a stepped shape (best observed in Figure 4, see Attachment B), the positioning means facilitating the horizontal positioning of the reinforcing unit with respect to the body part when the stepped shape of the positioning means aligns with at least a portion of the longitudinal slot of the body part;

Bridges discloses the claimed invention except for the substantially coplanar alignment of at least one edge of the pair of opposing circumferential edges of the body part and at least one edge of the pair of opposing circumferential edges of the reinforcing unit. Morris teaches in a pipe repair device, i.e. pipe joint, with a reinforcing unit (36 - see Attachment F) that has a

coplanar alignment of at least one edge of the pair of opposing circumferential edges of the body part and at least one edge of the pair of opposing circumferential edges of the reinforcing unit to fully span the gap in the body part (column 4, lines 32-40). The Examiner notes that the reinforcing unit of Morris is the same axial length of the respective body part. As Morris relates to pipe joints with gaped body parts, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the reinforcing unit of Bridges by simply increasing the longitudinal length to make a coplanar alignment of at least one edge of the pair of opposing circumferential edges of the body part and at least one edge of the pair of opposing circumferential edges of the reinforcing unit as taught by Morris to fully span the gap in the body part.

Note that the method of forming the device is not germane to the issue of the patentability of the device itself. Therefore, the recitation of the limitation “provided by rolling a planar material to form a cylindrical structure” in line 2 of claim 1 has been given little patentable weight.

As best understood, claims 2/1, 4/2/1, and 6/2/1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bridges in view of Morris as applied to claims 1, 3/1, 4/1, 4/3/1, 6/1, 6/3/1, and 7/1 above, and further in view of Cassel et al (U.S. 6,519,815).

Bridges in view of Morris provide for the claimed invention except for a stop means on the reinforcing unit, the stop means having a stepped shape and extending along at least a portion of one edge of the pair of opposing circumferential edges of the reinforcing unit. Cassel et al teach a band clamp, analogous to the pipe joint as the invention has a body part, reinforcing unit,

and structurally operates under the same principles, with a reinforcing unit (13g in Figure 18, see Attachment E) having a stop means with a stepped shape and extending along the circumferential edge of the reinforcing unit to bridge across the tightening mechanism (column 9, lines 60-66). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the reinforcing unit as provided for by Bridges in view of Morris with the stop means as taught by Cassel et al to bridge across the tightening mechanism.

As best understood, claims 5/4/1, 5/4/2/1, and 5/4/3/1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bridges in view of Morris in view of Cassel et al as applied to claims 1, 3/1, 4/1, 4/3/1, 6/1, 6/3/1, 7/1, 2/1, 4/2/1, and 6/2/1 above, and further in view of Morris.

Bridges in view of Morris in view of Cassel et al, as advanced above, provide for the claimed invention except for a close contact means constituent of the sealing unit, the close contact means spaced apart and extending longitudinally along at least a portion of the surface of the sealing unit in contact with the inner surface of the body part. Morris teaches a pipe joint and further teaches a sealing unit with close contact means (22 - noted in Figure 1, see Attachment F) spaced apart and extending longitudinally along at least a portion of the surface of the sealing unit to increase the sealing units barrier to fluid leakage (column 2, lines 62-66). As Morris relates to pipe joints with gaped body parts, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the sealing unit provided for by Bridges in view of Morris in view of Cassel et al with a close contact means further taught by Morris in contact with the inner surface of the body part (a mere reversal of essential working

parts of the sealing means involving only routine skill in the art) to increase the sealing units barrier to fluid leakage.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new grounds of rejection, see rejections above.

### ***Conclusion***

Applicant's amendment ("the body part having... the body part", claim 1, lines 3-7; "wherein at least one edge... are substantially coplanar", claim 1, lines 19-21; "the reinforcing means... of the body", claim 1, lines 14-18; "the stop means extending... the reinforcing unit", claim 2, lines 3-5; "each of the upper and lower parts... diameter of the other part", claim 3, lines 4-6; "the close contact means spaced apart... of the body part", claim 5, lines 4-6; Newly presented claim 7) necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay R. Ripley whose telephone number is 571-272-7535. The examiner can normally be reached on 01:00 P.M. - 8:00 P.M. .

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on 571-272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

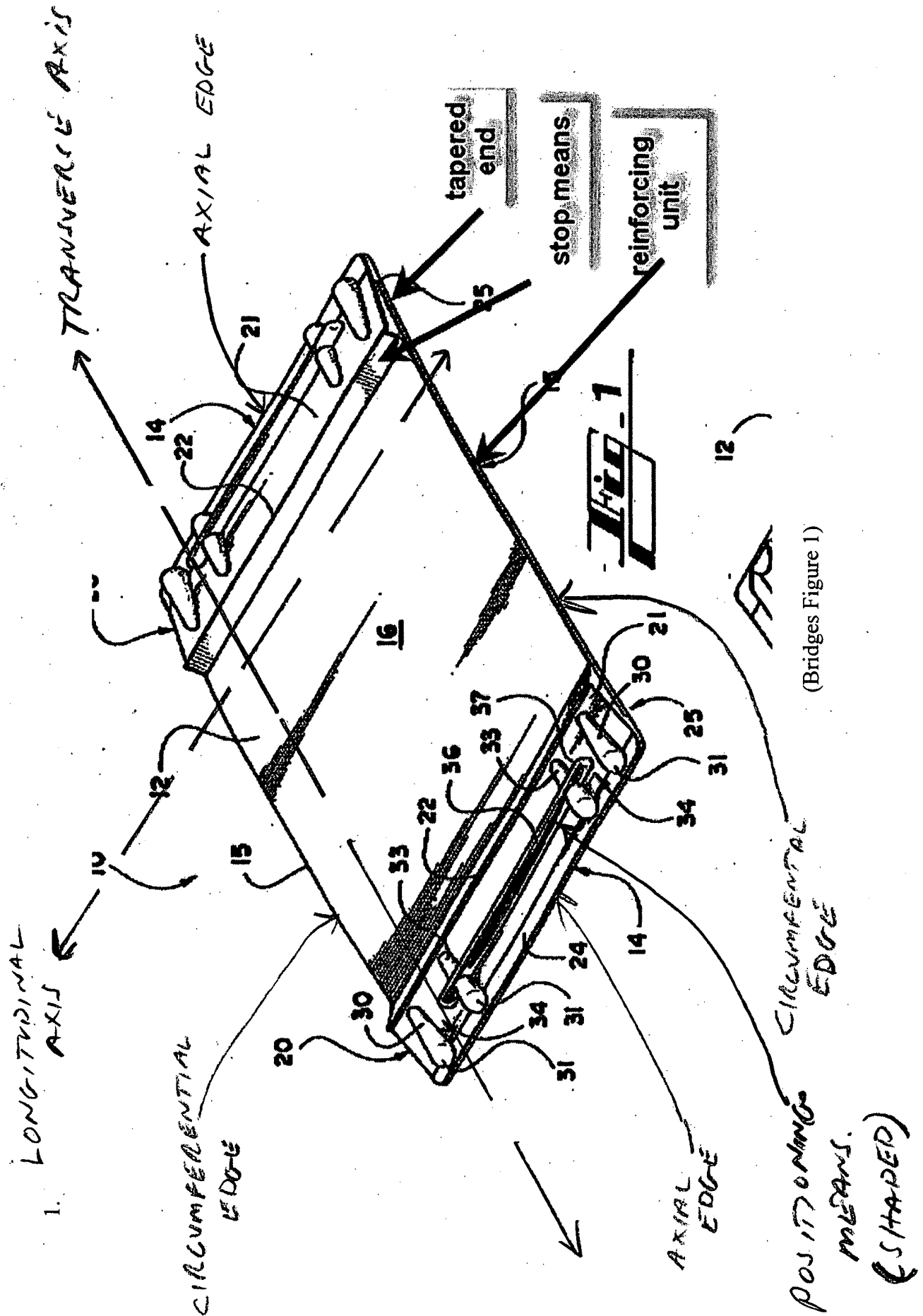


J. R. Ripley



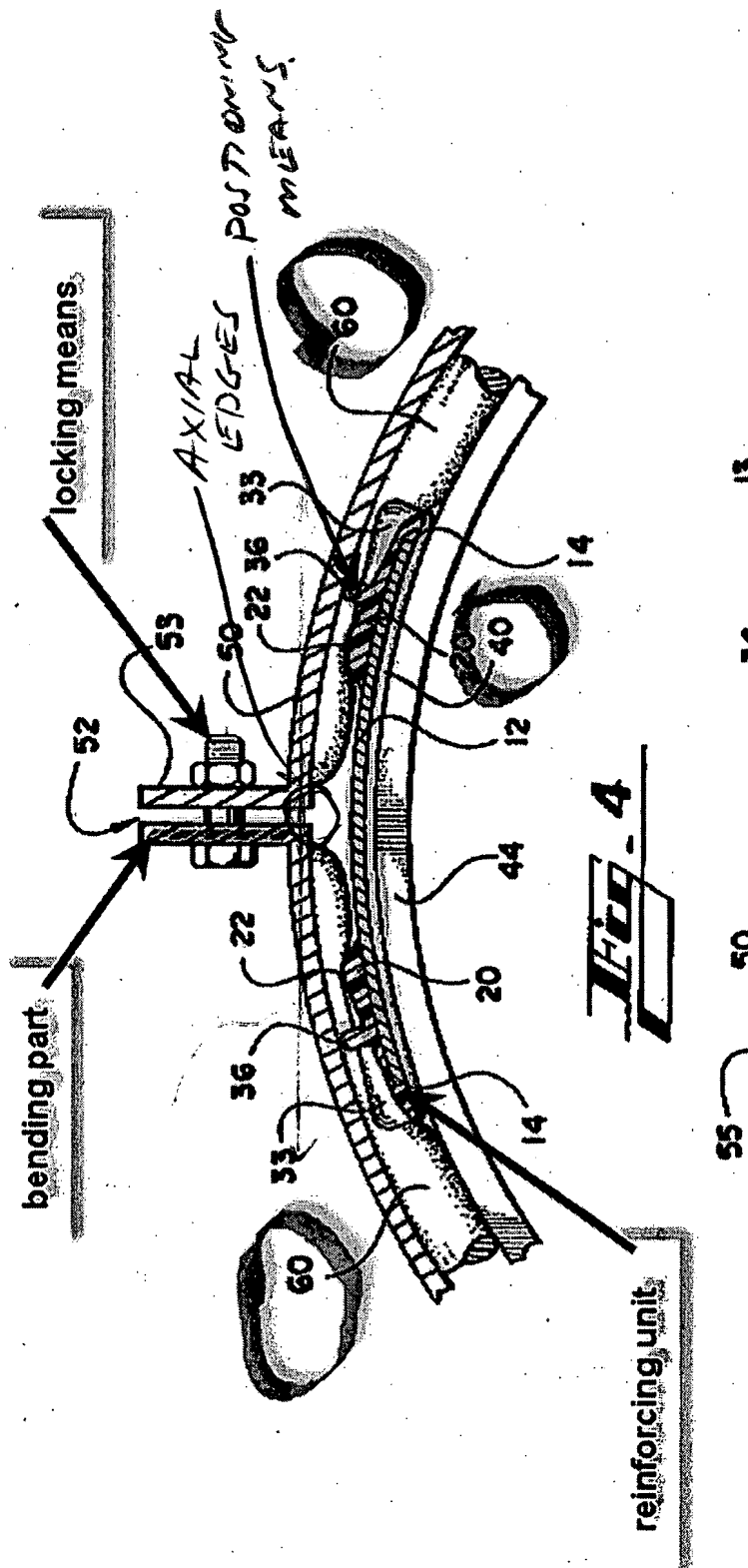
DANIEL P. STODOLA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600

# ATTACHMENT A



(Bridges Figure 1)

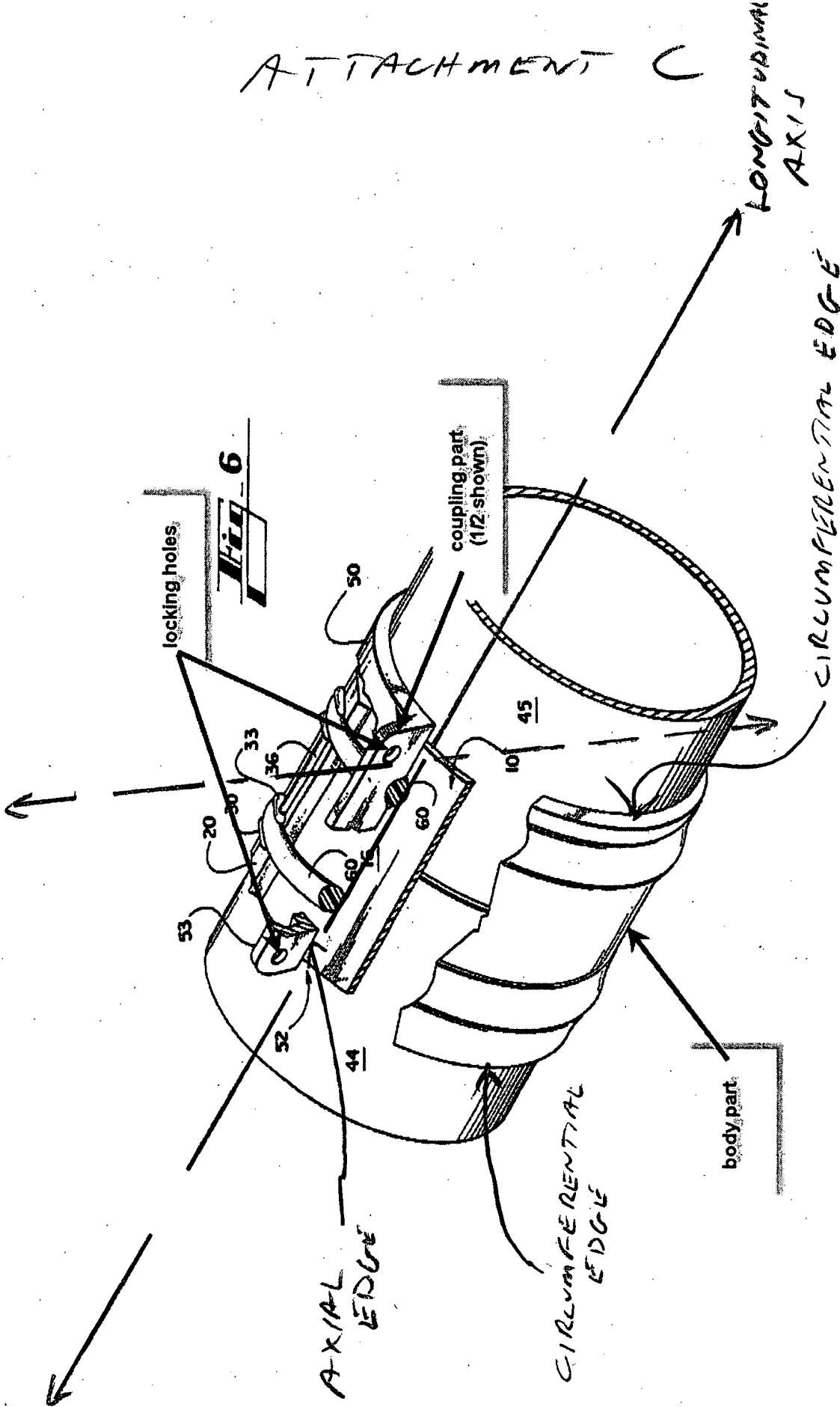
ATTACHMENT B



(Bridges Figure 4)

# ATTACHMENT C

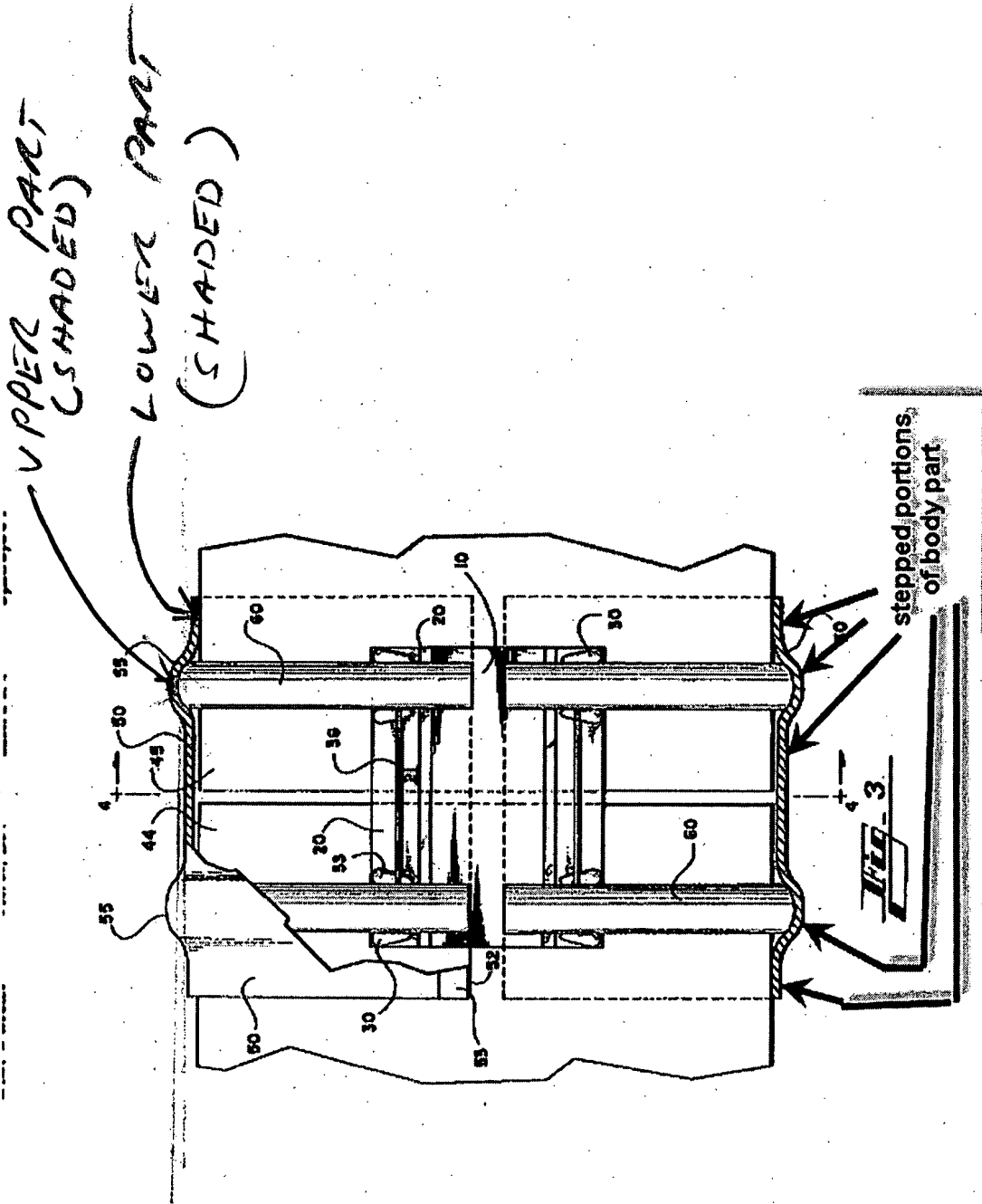
A TRANSVERSE AXIS



(Bridges Figure 6)



# ATTACHMENT D



(Bridges Figure 3)

## US 6,519,815 B2

